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BRAIN HEALTH IS NATIONAL INFRASTRUCTURE

A Call to Action for Philanthropy, Public Policy, and Investment Community

Findings and a Path Forward from the
10th Annual State of the Science Symposium
Washington, DC · September 14, 2026

A White Paper of the Seafood Nutrition Partnership
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In partnership with the SNP Scientific Nutrition Advisory Council (SNAC) and GAIN
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Executive Summary

At the 10th Annual State of the Science Symposium in Washington, DC, eight experts spanning nutrition science, food systems, military health, and economic policy presented evidence that converges on a single conclusion: the brain is a physical structure, built from what we eat, and the American food system — along with the federal infrastructure built on top of it — is not reliably supplying the building blocks it needs.

Homo sapiens evolved along coastlines, and marine food sources consumed supplied the omega-3 fatty acids, iodine, zinc, and other nutrients required to build and sustain the brain. All of these nutrients are a concern in the modern diet. For example, a very recent analysis found that 97.9 percent of US adults fall below the Omega-3 Index level, associated with the lowest risk of coronary artery disease. Among active-duty military personnel, a low omega-3 index is associated with higher risk of suicide, tying omega-3 fatty acids to brain health.

The US costs for mental health are staggering. Alzheimer's and related dementias cost the US $409 billion in 2026 and is the only major chronic-disease category on pace to nearly triple in cost by 2050 to $1+ trillion. The Department of Defense alone spends $1.4 billion annually on clinical mental health care. Altogether, the U.S. invests an estimated $888 billion in brain-health treatment and ~$1.8 trillion in brain-skills development. McKinsey Health Institute estimates that scaling brain-health interventions could reduce these costs and add $1.9 trillion to U.S. GDP by 2050.

Nutrition offers a scalable opportunity to improve mental health. The science has already moved policy once: the 2025–2030 Dietary Guidelines for Americans raised recommended seafood intake from two to three-plus servings per week, and federal pregnancy guidance for seafood consumption now highlights the benefits of intake. These are proof points, not endpoints. Turning them into durable infrastructure — the kind that shows up automatically in military feeding programs, school lunches, SNAP and WIC standards, and consumer nutrition labels — requires three sectors to each do what only it can do.

This paper makes the case, and the ask, to each of them.

- Philanthropy is asked to fund the field-building work — brain-nutrition education, coalition infrastructure, and the research-to-policy bridge — that no single actor can finance alone.
- Public policy is asked to write brain nutrition into the infrastructure it already controls.
- The investment community is asked to treat the $7 billion prevention gap as what it is: a market opportunity, best met through blue-food innovation, omega-3 bioavailability, and the diagnostic infrastructure needed to measure progress at scale.

None of the three can build this alone. Together, they can move brain health from the margins of separate agendas to the center of one: a national infrastructure that gives every American brain, from the first trimester to the last decade of life, the nutrients needed to build and sustain brain health.

1. Why Now

Dr. Michael Crawford, Professor at Imperial College London and Director of the Institute of Brain Chemistry and Human Nutrition, opened the Symposium's pre-conference science salon with the evolutionary case for why nutrition and brain health cannot be separated. Homo sapiens, he argues, evolved along coastlines, where the marine food web supplied the omega-3 fatty acid, docosahexaenoic acid (DHA), iodine, and trace minerals that cerebral expansion required. The signature of that history is still written into human biology — vernix and squalene on newborn skin mirror traits found in marine mammals — and the case is now urgent: global analysis shows average cranial capacity has fallen from roughly 1,450 cubic centimeters in the 1970s to 1,336 cubic centimeters today, alongside a rise in mental-health and neurodevelopmental conditions that Dr. Crawford connects directly to the displacement of marine nutrients from the modern diet.

> *"Life began in the ocean. We must save the seas to save ourselves. Brain disorders have overtaken all other burdens of ill health. This cost is greater than heart disease and cancer combined."*
>
> — Dr. Michael Crawford, Institute of Brain Chemistry and Human Nutrition, Imperial College London

That warning framed the 10th Annual State of the Science Symposium, convened on September 14, 2026 in Washington, DC by the Seafood Nutrition Partnership's Scientific Nutrition Advisory Council (SNAC) in partnership with GAIN (the Global Alliance for Improved Nutrition). Eight experts — spanning nutrition science, food systems, military medicine, and economic policy — presented under a single theme: Brain Health Is National Infrastructure.

The Symposium's closing remarks put the argument in its simplest form: the brain is physical, biological, and built — and that raises one question that belongs as much in the kitchen and the classroom as in the research journal: are we giving people the building blocks they need to build a brain?

This paper distills the Symposium's evidence and translates its stated goals — to reframe brain health as a keystone intervention, to build a shared investment thesis, and to draft a national funding roadmap — into a direct case and a direct ask for the three sectors best positioned to act: philanthropy, public policy, and the investment community.

2. The Science Is Settled: Brain Health Runs on Nutrition

2.1 The Brain Is Built From Nutrients

Docosahexaenoic acid (DHA, 22:6n-3) is the dominant fatty acid in human brain tissue — the brain's fatty-acid composition includes roughly 3.5 grams of DHA — and it is structurally central to neurons and synapses. Dr. Richard Bazinet, Canada Research Chair in Brain Lipid Metabolism at the University of Toronto, presented both observational and controlled-study evidence on DHA's role across the life course, while cautioning against oversimplification: seafood intake and DHA intake are related but not identical, and the brain benefit of seafood consumption reflects a broader nutrient package — including iodine, copper, zinc, manganese, and selenium — that protects the brain from oxidative damage.

> *"It's not just the omega-3 story — it's a whole nutrient package."*
>
> — Dr. Tom Brenna, Chair, SNP Scientific Nutrition Advisory Council; Dietary Guidelines Advisor, 2010, 2015, 2025

That nutrient supply has eroded over the past century. The share of U.S. caloric intake from soybean and seed oils rose from near zero in 1900 to roughly 20 percent by 1999, a shift that suppresses the body's conversion of plant-based fatty acids into usable EPA and DHA. Industrial animal feed compounds the effect: DHA content in chicken has fallen from approximately 170 mg per 100g in the 1970s to as low as 13 mg today, as feed shifted to corn and soy.

2.2 A Population-Scale Deficiency

The clearest evidence of the gap comes from direct measurement. An analysis referencing CDC data across more than 7,200 Americans found that 97.9 percent fall below the desirable Omega-3 Index of 8 percent, more than half (54 percent) fall below 4 percent, and the mean index across the sample was just 4.12 percent. Only 24.3 percent of the sample reported eating seafood twice a week or more — already below the new federal recommendation of three or more servings.

2.3 Evidence Across the Lifespan

- Maternal and child neurodevelopment: children of mothers who consumed seafood regularly during pregnancy show an advantage of two to five full-scale IQ points versus children of non-fish-eaters. A synthesis spanning more than 200,000 mother-child pairs reports 51 beneficial neurodevelopmental associations against only three adverse associations, with no discernible pattern among the latter (Spiller et al., Neurotoxicology, 2023).
- Premature infants: DHA supplementation has been associated with a 3.5-point increase in IQ scores.
- Adult cognition: observational data link higher fish intake to better memory and executive function over decades, though short-term randomized controlled trials in adults have produced mixed or null results — a gap the Symposium's experts attribute to the difficulty of correcting decades of accumulated deficiency in a short trial window.

The mercury advisories that have shaped maternal guidance for two decades are now being re-examined in light of this evidence. Retired FDA official Mike Bolger and former NIH neuroscientist Dr. Joseph Hibbeln have both stated publicly that mercury-only guidance, formulated without weighing the cost of lost brain-critical nutrients, has likely driven pregnant women away from a net-beneficial food. Dr. Gary Myers, co-author of the landmark

Seychelles studies — which examined a population eating roughly ten times the seafood of the average American — found no adverse pattern from mercury exposure and consistent evidence of benefit.

2.4 Policy Has Already Started to Move

The evidence base above is not hypothetical to federal policy — it has already changed it. The 2025–2030 Dietary Guidelines for Americans raised the recommended seafood intake from two to three-plus servings per week, revised the protein RDA upward from a minimum-adequacy standard (0.8 g/kg body weight/day) to a healthy-intake range (1.2–1.6 g/kg/day, with at least half from nutrient-dense animal-source protein), and directed that USDA increase the minimum variety of healthy staples — including seafood — that SNAP retailers must stock, from 12 to 28 varieties, enforced beginning Fall 2026. Neurocognitive health was formally recognized as a chronic-disease category by the Dietary Guidelines Advisory Committee in 2015, with seafood identified as its primary nutritional agent. These are the proof points this paper builds from: policy has moved before, on this exact evidence, and can move again.

3. The Cost of Underinvestment

3.1 The Civilian Toll: Alzheimer's and Chronic Brain Disease

U.S. health care spending reached $5.3 trillion in 2024 — 18 percent of GDP, or $15,474 per person — and 90 percent of it, roughly $4.8 trillion, goes toward chronic disease and mental-health conditions. Among the major chronic-disease categories, only one is on track to nearly triple in cost by 2050 to $1+ trillion: Alzheimer's and related dementias.

7.4M Americans 65+ living with Alzheimer's — about 1 in 9	**$409B** total 2026 cost of care, up $25B from 2025	**$405K** average lifetime cost per person, 70% paid by families	**13M** unpaid family caregivers, giving 19B+ hours of care a year

Source: Alzheimer's Association, 2026 Alzheimer's Disease Facts and Figures; CDC, National Health Expenditure Data 2024.

Decades of clinical-trial investment have produced comparatively little: current thinking points to disease pathology building for 15–20 years before symptoms appear (meaning most trials intervene too late), the blood-brain barrier blocking most drug candidates from reaching effective concentrations, and a funding pattern that has concentrated disproportionately on a single biological hypothesis despite repeated setbacks. Each points toward the same conclusion — that the more tractable opportunity may sit upstream, in prevention, rather than downstream, in treatment.

3.2 The Brain Capital Opportunity — and the Investment Gap

The World Economic Forum, in partnership with the McKinsey Health Institute, published a January 2026 report introducing "brain capital" — the pairing of brain health and brain skills as a strategic economic asset. Brain-health conditions already account for 24 percent of global disease burden, 12 billion working days lost each year, and roughly $1 trillion in annual lost productivity from anxiety and depression alone; one in seven people worldwide live with a mental disorder.

> *"Our collective brain power is a strategic economic asset — and it needs to be valued, measured, and invested in as such."*
>
> — Cheryl Healy, Co-Director of Brain Health, McKinsey Health Institute

McKinsey's modeling finds that fully scaling brain-health interventions could add $1.9 trillion to U.S. GDP by 2050 — an incremental 17 basis points of annual GDP growth — driven primarily by less time lost to sickness and disability, higher workforce engagement, and fewer early deaths. Yet the same analysis exposes a striking imbalance in where U.S. investment currently flows:

Category	Estimated annual U.S. investment
Brain-health treatment (diagnosis, treatment, research)	$888 billion
Brain-skills investment (early childhood through adult learning)	$1.8 trillion
Brain-health promotion & prevention	$7 billion

Source: UNESCO; Institute for Health Metrics and Evaluation (IHME); Administration for Children and Families; Candid; McKinsey Health Institute analysis. Figures specific to the U.S.

Nutrition — among the least expensive and most scalable levers available — sits almost entirely inside that $7 billion tier. It is, in other words, the most underfunded piece of the most underfunded category in brain economics.

3.3 Military Readiness: A Measurable, Fixable Vulnerability

Dr. Michael Lewis, a retired U.S. Army colonel, physician, and author of When Brains Collide, presented Omega-3 Index data from active-duty samples that mirror the civilian population — and connected it directly to two of the military's costliest problems: suicide and basic-training attrition.

97.9% of 1,600+ active-duty samples had DHA/Omega-3 levels below the desirable threshold	**62%** greater suicide risk correlated with profoundly low Omega-3/DHA levels (Lewis, Hibbeln et al., J Clin Psychiatry, 2011)	**$1.4B** spent annually on DoD clinical mental-health treatment programs	**~$900M** lost annually to basic-training attrition (10–15% washout rate)

Dr. Lewis's proposal is deliberately narrow and low-cost: the Department of Defense already draws blood at accession and during the annual Periodic Health Assessment. Adding a dried-blood-spot Omega-3 Index panel — about $50 per test — would cost roughly $65 million a year to test the entire 1.3-million-person active force: 4.6 percent of current clinical mental-health spending, for a readiness metric that does not yet exist.

> *"We test everything — armor, gear, weapon systems. Now we're going to start testing testosterone. Why aren't we testing the brain's biochemistry?"*
>
> — Dr. Michael Lewis, Retired U.S. Army Colonel; Physician and Researcher; Author, When Brains Collide

The same testing logic scales beyond the military: a 25 percent reduction in basic-training attrition alone would be worth an estimated $173 million a year against a $65 million annual testing cost — well before accounting for parallel reductions in suicide risk and clinical mental-health utilization. Along with testing for Omega-3 index levels, two feeding studies built for military dining facilities replaced high-linoleic oils and foods with lower n-6, higher n-3 versions and improved blood fatty acid status in 5 to 8 weeks.

3.4 Global Food Systems: Capacity Exists, Trust Does Not

Feeding a global population expected to reach nearly 10 billion by 2050 is, per GAIN's Dr. Mduduzi Mbuya, fundamentally a question of infrastructure reliability.

> *"Our food systems are critical infrastructure. And like any infrastructure, its value depends on whether it reliably does the job that matters — nourishing people."*
>
> — Dr. Mduduzi Mbuya, Director, Knowledge Leadership, GAIN (Global Alliance for Improved Nutrition)

Malnutrition in all its forms — under- and over-nutrition alike — costs the world an estimated $3 to $3.5 trillion a year, a burden GAIN's Nutritional Value Score and nutrition-environment life-cycle tools are designed to help policymakers address jointly rather than as separate agendas. The supply side is more capable than commonly assumed: ocean food production could grow sixfold with better management, aquaculture now supplies more than half of global seafood output after 21 percent growth from 2014 to 2024, and its carbon footprint is among

the lowest of any protein source — wild seafood emits six times less carbon than beef and more than twice less than cheese, while global aquaculture accounts for just 0.49 percent of anthropogenic greenhouse gases.

The constraint is trust, not capacity. Marine Stewardship Council research finds that 67 percent of U.S. seafood consumers want to buy only sustainably sourced seafood, but 52 percent distrust the environmental claims made about the products they already buy — and unlike other food categories, familiar shortcuts (brand loyalty, "non-GMO," "pasture-raised") don't transfer to seafood.

> *"Seafood may be suffering from a shortcut vacuum. Brand doesn't guide the choice, consumers are skeptical of company claims, and low price can trigger distrust rather than appeal — so what's left to signal quality and sustainability?"*
>
> — Camila Flanagan, Marketing Manager, Marine Stewardship Council

Credible, independent labeling is the closest available fix: 60 percent of consumers say ecolabels increase their trust, and 72 percent actively want independent verification of environmental claims — yet only 40 percent notice ecolabels while shopping and just 41 percent report buying ecolabeled seafood. That gap between demand for a trust signal and its actual visibility at shelf is, itself, an infrastructure problem.

4. Three Sectors, One Infrastructure: A Coordinated Call to Action

No single sector can turn this evidence into infrastructure alone. The Symposium's own design — convening philanthropic funders, policy advocates, and system-builders in the same room — reflects that reality. What follows is a specific, distinct ask for each.

4.1 Philanthropy: Fund the Field

Philanthropy is the best sector positioned to fund what markets and government will not fund first — field-building. That means underwriting brain-nutrition education campaigns aimed at consumers and clinicians alike, supporting the research-to-policy pipeline that turned SNP's own systematic reviews into Dietary Guidelines language in 2020 and again in 2025, and capitalizing the coalition infrastructure — convening bodies, shared data platforms, communications capacity — needed to keep philanthropy, policy, and industry coordinated over a multi-year horizon rather than a single grant cycle.

- Fund a formal field scan / landscape analysis of the brain-nutrition space, positioning it for foundation program officers the way a theory-of-change document positions any emerging field for internal board approval.
- Support consumer- and clinician-facing brain-nutrition education, building on models already in market such as SNP's Fall in Love with Seafood campaign.
- Capitalize the multi-sector coalition SNP is building with GAIN and SNAC, so that credibility built in one funding cycle carries into the next.

SNP's existing funder segmentation — five donor archetypes spanning Neuro-Scientists, Longevity Patrons, Food System Builders, Venture Philanthropists, and Equity Advocates — already gives this ask a cultivation pathway; this paper is designed to serve as the evidence document behind that outreach.

4.2 Public Policy: Build It In

Public policy is asked to do what only it can do: make brain nutrition the default, not the exception, across the infrastructure it already controls.

- Establish a Dietary Reference Intake (DRI) for Omega-3's EPA and DHA — currently under review as part of the broader DRI update process — giving nutrition labeling and federal feeding standards a scientific reference point they do not yet have.
- Apply the 2025–2030 Dietary Guidelines' three-or-more-servings standard consistently across every federal feeding program it already governs: the National School Lunch Program, the Child and Adult Care Food Program, SNAP, WIC, and all military feeding programs.
- Mandate Omega-3 Index testing as a military readiness metric, added to blood draws already scheduled at accession and the annual Periodic Health Assessment — an estimated $65 million a year to test the entire active force.
- Explore Omega-3 visibility on the Nutrition Facts label, creating the same kind of market signal that reshaped protein and saturated-fat formulation once those became labeled, measurable quantities.

4.3 Investment: Close the Gap

The investment community — corporate strategy teams, impact investors, and venture funds alike — is asked to treat the $7 billion brain-health-promotion tier not as a philanthropic obligation but as an underserved market.

- Fund blue-food and aquaculture innovation — algae-oil omega-3 production, feed efficiency, and fishmeal alternatives — that can supply omega-3 at scale without added pressure on wild fisheries.
- Fund the diagnostic infrastructure to bring Omega-3 Index testing — proven at roughly $50 per test in a military context — into civilian primary care and prenatal care, where it does not yet exist as a routine measure.
- Fund credible eco-labeling and verification infrastructure that closes the trust gap Marine Stewardship Council research identifies: strong demand for a sustainability signal, with too little visibility of the labels meant to provide it.

> *"What we eat matters, and we should make brain-healthy foods and activities the default for our society."*
>
> — Mrs. Linda Cornish, Founder & President, Seafood Nutrition Partnership (SNP)

5. A Shared Investment Thesis: Toward a 10-Year Roadmap

The Symposium's VIP Roundtable was explicitly designed to produce three things: a reframing of brain health as a keystone intervention across health, education, and climate; a shared investment thesis built around four to six investable system strategies; and a draft funding roadmap for Brain Health as National Infrastructure. This section proposes the structure for that roadmap.

Rather than build a coordination framework from scratch, SNP is well positioned to adapt one already validated at global scale: the World Economic Forum and McKinsey Health Institute's Brain Economy Action Forum organizes cross-sector action around five levers — Mobilize, Invest, Study, Foster, and Safeguard — designed explicitly to align private-sector, public-sector, health-sector, and civil-society stakeholders around a shared brain-capital agenda.

Linda Cornish's opening remarks to the Symposium named a parallel, seafood-specific set of levers — research, policy, markets, delivery platforms, and communications — that map cleanly onto the World Economic Forum's model and onto the three-sector call to action in Section 4:

Lever	Primary sector owner(s)	Illustrative near-term action
Research	Philanthropy	Fund the field scan and ongoing systematic-review capacity that has already moved federal guidance twice
Policy	Public Policy	Omega-3 DRI; consistent feeding-program standards; military testing mandate
Markets	Investment	Blue-food and diagnostic-infrastructure capital; eco-label verification
Delivery platforms	Policy + Investment	Federal feeding programs; retail and clinical distribution of Omega-3 testing
Communications	Philanthropy	Consumer and clinician education; coalition-building and shared messaging

A ten-year roadmap built on these five levers — with named owners, shared metrics (starting with population Omega-3 Index data), and a joint funding table — is the deliverable this white paper is designed to support. SNP proposes convening philanthropic, policy, and investment stakeholders around a working draft of that roadmap within the next two quarters.

6. Conclusion: From Margins to Mainstream

For decades, the case for brain nutrition lived almost entirely in scientific journals — built, paper by paper, by researchers like Dr. Michael Crawford long before mental health and brain health were prominent public conversations. Science has carried that case about as far as it can carry it alone. What happens next is a question for philanthropy, public policy, and investment community — the three sectors with the capital, mandate, and market reach to turn evidence into infrastructure.

The Symposium's own closing message framed the task plainly: awareness influences choice, choice creates demand, demand rewards innovation, and innovation gives people more and better choices. Philanthropy is typically the sector that moves first — seeing what matters before it becomes obvious to everyone else, and helping science reach policymakers, policy reach communities, and invisible problems become visible ones. Policy is what turns awareness into a default rather than a personal choice. Investment is what makes the better choice available at scale, everywhere, permanently.

The near-term ask, by sector

- Philanthropy: fund a formal field scan and the coalition infrastructure behind it — the on-ramp already exists in SNP's funder segmentation work.
- Public policy: establish the Omega-3 DRI, apply the three-servings standard across every federal feeding program, and pilot Omega-3 Index testing as a military readiness metric.
- Investment: capitalize the $7 billion brain-health-promotion gap through blue-food innovation, diagnostic infrastructure, and credible eco-labeling.

> *"Are we giving people the building blocks they need to build a brain? What if part of the problem is not only the software — what if we are failing to build and protect the hardware? That is why nutrition for the brain matters, and why seafood matters."*
>
> — Gustavo Lara, Managing Director, Seafood, Cargill — Closing Call to Action, 10th Annual State of the Science Symposium

Brain health has moved from the margins of separate agendas — health care, education, defense, agriculture, climate, and more — into a single, shared one. The Seafood Nutrition Partnership is inviting philanthropy, public policy, and investment to build it there, together.

Appendix A — Speaker Roster & Credentials

Speaker	Affiliation	Session
Dr. Michael Crawford	Institute of Brain Chemistry and Human Nutrition, Imperial College London; Order of the Rising Sun (Japan) for his contributions to DHA and omega-3 science	Pre-Symposium Science Salon: The Shrinking Brain
Mrs. Linda Cornish	Founder & President, Seafood Nutrition Partnership	Opening Remarks — Building The Business Case for Architecting a National Infrastructure Around Brain Health
Dr. Tom Brenna	Chair, SNP Scientific Nutrition Advisory Council; Dell Medical School, UT Austin; Dietary Guidelines Advisor 2010/2015/2025; Distinguished Fellow of the American Society for Nutrition	Policy Win: The Nutrition Policy is Now Here, It's Just Not Very Evenly Distributed
Dr. Mduduzi Mbuya	Director, Knowledge Leadership, GAIN (Global Alliance for Improved Nutrition)	The Food System as Critical Infrastructure
Dr. Richard Bazinet	Canada Research Chair in Brain Lipid Metabolism, University of Toronto	Nutritional Building Blocks of a Healthy Brain
Ms. Cheryl Healy	Co-Director of Brain Health, McKinsey Health Institute	The Human Advantage: Stronger Brains in the Age of AI
Dr. Michael Lewis	Retired U.S. Army Colonel; Physician; Former professor at the Uniformed Services University Medical School; Researcher; Author, When Brains Collide	Omegas and the Military
Ms. Molly Jacques	VP, Market Development, Global Seafood Alliance	Blue Foods and Planetary Boundaries
Ms. Camila Flanagan	Marketing Manager, Marine Stewardship Council	Inside the Consumer Mind
Mr. Gustavo Lara	Managing Director, Seafood, Cargill	Call to Action: Solving Our Greatest Challenge, Brain Health

Appendix B — Key Statistics at a Glance

Science & Population Health

- 97.9% of Americans sampled fall below the desirable Omega-3 Index of 8%; mean index 4.12%
- +2 to +5 IQ points in children of mothers who consumed seafood regularly during pregnancy
- 51 beneficial vs. 3 scattered adverse neurodevelopmental associations across 200,000+ mother-child pairs
- 2 → 3+ servings/week: the seafood intake increase in the 2025–2030 Dietary Guidelines for Americans

Economic Cost & Opportunity

- $409B: 2026 cost of Alzheimer's care in the U.S. — on pace to nearly triple by 2050 to $1+ trillion
- $1.9T: potential added U.S. GDP by 2050 from scaling brain-health interventions (McKinsey/WEF)
- $888B / $1.8T / $7B: current U.S. investment in brain-health treatment / brain-skills / brain-health promotion & prevention
- $3–3.5T: annual global cost of malnutrition in all its forms

Military Readiness

- 62% greater suicide risk correlated with profound Omega-3/DHA deficiency in active-duty personnel
- $1.4B: annual DoD spending on clinical mental-health treatment programs
- ~$900M: annual cost of basic-training attrition
- $65M: annual cost to Omega-3-test the entire 1.3M-person active force (4.6% of current mental-health spend)

Food Systems & Sustainability

- Aquaculture supplies >50% of global seafood production, up 21% from 2014–2024
- Wild seafood's carbon footprint is 6x lower than beef, 2x+ lower than cheese
- 67% of U.S. seafood consumers want sustainably sourced seafood; 52% distrust general “green” claims
- 72% want independent verification of environmental claims; only 40% notice ecolabels while shopping

Appendix C — Sources & Further Reading

- Alzheimer's Association, 2026 Alzheimer's Disease Facts and Figures
- CMS, National Health Expenditure Data 2024; CDC, Fast Facts: Health and Economic Costs of Chronic Conditions
- Cummings et al., "Why Alzheimer's Drugs Keep Failing" and related AD drug-development pipeline reviews (2026)
- Spiller et al., Neurotoxicology (2023) — maternal seafood consumption and child neurodevelopment
- Lewis MD, Hibbeln JR, et al., Journal of Clinical Psychiatry (August 2011) — Omega-3 status and active-duty suicide risk
- Young AJ, Marriott BP, Champagne CM, et al. Br J Nutr. 2017. https://doi.org/10.1017/S0007114517001003
- Bukhari A, Lutz L, Smith T, et al. 2022. https://repository.lsu.edu/pop_public_health_pubs/136
- Layman & Leidy, Appendix 4.9, 2025 Dietary Guidelines for Americans — protein intake recommendations
- Beal & Ortenzi, "Nutritional Value Score Rates Foods Based on Nutrient Density and Noncommunicable Disease Prevention," Journal of Nutrition (2026)
- McLaren et al., "Integrated Environmental and Nutritional Efficiencies of Local Foods in Indonesia," The Lancet Regional Health — Western Pacific (2026)
- World Economic Forum & McKinsey Health Institute, Brain Capital report (January 2026); World Economic Forum, Future of Jobs Report 2025
- 2026 GlobeScan Consumer Perceptions Survey, Seafood Consumers (US), n=2,500
- USDA press release, SNAP retailer stocking-standard update (May 7, 2026)
- Bloomberg, "Why Pregnant Women Shouldn't Stop Eating Fish" (November 2025)
- FAO. 2026. *The State of World Fisheries and Aquaculture 2026 – Blue Transformation: turning vision into impact.* Rome. https://doi.org/10.4060/cd8357en

Appendix D — Expert Presentations & Videos

Presentations and the full video recordings of each expert presentation from the 10th Annual State of the Science Symposium are available on the SNP website and via the SNP YouTube playlist:

https://www.seafoodnutrition.org/state-of-the-science-symposium/

https://www.youtube.com/playlist?list=PLZv8wZHlBDYs

Appendix E — Glossary

Term	Definition
DHA	Docosahexaenoic acid (22:6n-3) — the dominant omega-3 fatty acid in brain tissue, structurally central to neurons and synapses.
EPA	Eicosapentaenoic acid — an omega-3 fatty acid that works alongside DHA and is commonly co-measured with it.
Omega-3 Index	A blood biomarker (percentage of EPA+DHA in red-blood-cell membranes) used to measure omega-3 nutritional status; 8%+ is considered desirable.
DALYs	Disability-Adjusted Life Years — a standard public-health measure combining years lost to premature death and years lived with disability.
Brain Capital	A World Economic Forum / McKinsey Health Institute framework pairing brain health and brain skills as a measurable strategic economic asset.
NVS	Nutritional Value Score — a GAIN-developed metric scoring foods on nutrient density and non-communicable-disease prevention potential.
nLCA	Nutritional Life Cycle Assessment — a tool combining nutritional value with environmental-impact data to guide food-system policy.

Appendix F — Symposium Attendees

Pre-Symposium Science Salon 9.3.26 via Zoom: Organizations of attendees are listed.

Applied Nutrition Consulting
Belovo, Inc.
Brain Health Education and Research Institute
Cargill
CB Health Strategies
Coalition for Metabolic Health
DSM Nutritional Products
Fatty Acid Research Institute
Food and Behaviour (FAB) Research
Food As Medicine Therapeutics
Food's Future, LLC
FoodMinds
GAIN (Global Alliance for Improved Nutrition)
Global Seafood Alliance
GOED
ICF
Institute of Aquaculture, University of Stirling
Marine Stewardship Council
National Fisheries Institute
Northwest Aquaculture Alliance (NWAA)
Oldways
Seafood Nutrition Partnership
StarKist
Superior Fresh
University of Bristol, UK
University of Kansas Medical Center
University of Oklahoma Health Sciences Center
University of Toronto
US FDA retired
UT Austin, Dell Medical School
Waterloo Foundation

10th Annual State of the Science Symposium 9.14.26: Organizations of attendees are listed.

Albright Stonebridge Group
Applied Nutrition Consulting
Aquamar, Inc.
Belovo Inc.
Brain Health Education and Research Institute
Cargill
CB Health Strategies
Cornell University
DSM Nutritional Products
Fatty Acid Research Institute
FMI - The Food Industry Association
Food's Future, LLC
GAIN (Global Alliance for Improved Nutrition)
Global Seafood Alliance
GOED
Marine Stewardship Council
McKinsey Health Institute
neuRALabs, LLC
NHLBI/NIH
Nicole Chenard Nutrition
NOAA Aquaculture
NOAA Fisheries
Northwest Aquaculture Alliance (NWAA)
Oceans Caucus Foundation
Oldways
Seafood Nutrition Partnership
StarKist
Superior Fresh
U.S. FDA retired
University of Bristol, UK
University of Kansas Medical Center
University of Toronto
UT Austin, Dell Medical School
West Pass Seafood LLC
World Resources Institute

We sincerely appreciate the investment in time and attention from our valued attendees.